

COLPICHTHYS, THYRINOPS. AND AUSTROMENIDIA,
New Genera of Atherinoid Fishes from the New World.

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COLPICHTHYS new genus.

GENOTYPE.—*Atherinops regis* Jenkins and Evermann (Gulf of California).

Colpichthys regis is related to the species of *Atherinops*, with which it has heretofore been considered congeneric. But the Gulf species differs in so many ways from the typical species from the outer coasts of Lower California, and from California and Oregon, that a new genus may be erected for its sole reception.

Compared with *Atherinops*, *Colpichthys* may be distinguished as follows. The head is depressed, although the body is deeper and more strongly compressed than in *Atherinops*. The mouth is sub-inferior, being on a level with the lower margin of the eye; the upper lip is thickened. The uniserial teeth are Y-shaped, but the inner fork is usually much the shorter. The gill-rakers, 16 to 18 in number along the lower limb of the outer arch, are strongly compressed, curved, serrate on their inner margins, and relatively short, being about one-fourth as long as the eye. In typical *Atherinops* the gill-rakers are rather more numerous, 20 to 25, and they are slender, terete, straight, nearly smooth, and about two-fifths as long as the eye.

The scales of *Colpichthys* differ markedly from those of *Atherinops*, although constructed on a similar plan. The posterior or exposed field of the scale is marked outward from the focus to the first annulus or seasonal ring by circuli similar to those of the anterior field, but beyond this mark the circuli assume a sharply and irregularly undulate course paralleling the posterior margin of the scale. In *Atherinops* proper (*A. affinis*) the circuli of the posterior field throughout maintain a nearly even course, and are all greatly crowded, while in *Colpichthys* only those in the annuli or year checks are closely approximated. In *Colpichthys* there are about six basal radii within the first annulus, beyond which the number is abruptly decreased. In *Atherinops*, on the other hand, the radii are often absent, but on some scales 1, 2, or even 3, are in evidence; and these radii are not

modified at the first annulus. In *Colpichthys* further, the scales are rather thicker and larger than in *Atherinops*, the number of transverse series 47 to 51, instead of 52 to 72.

(*Colpichthys*, a fish of the bay or gulf.)

THYRINOPS new genus.

GENOTYPE.—*Atherinichthys pachylepis* Günther, 1864 (= *Menidia pachylepis* Jordan and Evermann 1896 = *Thyrina pachylepis* Jordan and Evermann 1898, and Regan 1907 = *Kirtlandia pachylepis* Gilbert and Starks 1904).

Thyrinops pachylepis, the only species of the genus, occupies a position almost exactly intermediate between *Kirtlandia* and *Atherinella*, agreeing with both of these genera as well as with *Menidia*, etc., in the posterior position of the anal fin, which is not advanced as in *Thyrina* and *Eurystole*. *Thyrina* closely resembles *Thyrinops*, and is probably a fresh-water derivative from some such form. This conclusion is strengthened by the fact that some species of *Thyrina*, especially *T. sardina*, have the scales on the sides more or less laciniate.

Thyrinops may be diagnosed as follows: form moderately slender, contracted ventrally as in *Thyrina*. Head rather pointed; gape strongly arched downward posteriorly; jaws forming a semicircular curve when viewed from above; maxillary not reaching to below front of orbit. Teeth in villiform bands, rather wide in the upper jaw, but narrow in the lower; outer series of premaxillary teeth spaced and a little enlarged; entire palate toothless. Scales thickened, rather deeper than long; the free margin rounded, but the dorsal, ventral, and basal margins nearly straight; circuli absent from the apical field, which is crossed by numerous fine, subparallel radii, between which the scale is produced so as to form a border more finely laciniate than in *Membras* (*Kirtlandia*); basal field usually crossed by a line or two along which the circuli are curved inward; basal radii usually absent on the trunk scales, or only a few shallow ones developed, whereas on the tail the scales are deeply sculptured with well developed radii;¹ The number of scales is about 40 in lateral series. Fin rays: dorsal, IV or V-I, 6 to 8; anal I, 20 to 23. Anal base decidedly longer than head, as in *Thyrina*; soft dorsal and anal fins scaleless, falcate in outline; origin of spinous dorsal well behind that of the anal, about an orbital length separating the two

¹ This variation has been entirely too much neglected in recent studies of fish scales, not so much in this family as in other groups.

verticals; pectorals falcate and elongate, reaching nearly to or even beyond, the tips of the pelvic fins.

Two specimens of *T. pachylepis* are at hand; they were collected January 5, 1908, by Anastasio Alfaro, in the Estero at Tivives near Puntarenas in Costa Rica. Lengths to base of caudal, 88 and 113 mm. The so-called annuli or seasonal rings on the scales are well developed, and resemble those of California Atherinids; the scales show respectively 2 and 3 of these rings, probably indicating the age in years of the two fishes. Dorsal rays, IV-I, 7 (both specimens); anal, I, 20 and I, 21; pectorals reaching a little past tips of pelvics, their length being contained 3.4 and 3.6 times in the total. Scales 40-9 and 42-9.

AUSTROMENIDIA new genus.

Atherinichthys (in part) Günther, Cat. 3, p. 402 (not *Atherinichthys* Bleeker = *Chirostoma* Swainson).

Basilichthys of authors (not of Girard, PROC. ACAD. NAT. SCI. PHILA., 1854, p. 198, *microlepidotus* = *regia*, hence *Basilichthys* = *Gastropterus* Cope = *Pisciregia* Abbott; see Thompson, Proc. U. S. Nat. Mus., 50, 1916, pp. 463-466).

GENOTYPE.—*Basilichthys regillus* Abbott.

Austromenidia is used to replace *Basilichthys* of authors and not of Girard, whose original type belongs to the genus later called *Gastropterus* and *Pisciregia*.

The fishes of this genus, referable to several species, inhabit both coasts of southern South America. They are of comparatively large size, and are of commercial importance. The scales are notably small, numbering from 67 to over 100 in lateral series. Both jaws are strong and arched downward posteriorly; the premaxillary is dilated distally. The teeth are disposed in narrow bands along the jaws, and are usually absent from the vomer, although a few teeth or even a small patch, may be present on that bone. The first dorsal fin begins well before the anal, at a point about midway between base of snout and base of caudal.

It will be noted from the foregoing diagnosis that *Austromenidia* resembles *Menidia* very closely, differing from it in the larger size, the stronger jaws, and the much finer scales.

The species of *Chirostoma*, confined to the fauna of the Lerma River System in Mexico, form a large series with diverse extremes. The scales are usually larger (37 to 75)² than in *Austromenidia*; the

² Regan's extreme count for *diazi*; the number probably includes the scales on the base of the caudal fin. The scales are usually larger in *Chirostoma*.

lower jaw stronger, projecting beyond the upper, at least at the symphysis,³ and forcing the gape into an oblique direction.

Species of "*Atherinichthys*" have been recorded by Günther and others from Australia and Tasmania, but they cannot be congeneric with any New World genera.⁴ The same is true of *Atherinichthys nouhuysi* Weber⁵ from New Guinea. The original type of *Atherinichthys* is identical with that of *Chirostoma* an earlier name.

Two genera related to *Austromeniida*, *Odontesthes* and *Kronia*, have been described from the east coast of South America.

Odontesthes Evermann and Kendall⁶ has a peculiarly pikelike form, produced by the strength of the jaws, and by the positions of the dorsal and anal fins, which are inserted much farther back than in *Austromeniida*; the spinous dorsal originates nearly opposite the anal. The scales are of medium size (about 50 to 70 transverse series). The teeth on the jaws are in two series, and there are 2 or 3 groups of vomerine teeth. *Kronia*, recently described by Ribeiro,⁷ is said to have 3 linear groups of vomerine teeth; large sublaciniate scales (in 54 series); and the dorsal origin directly over the anus. Perhaps *Kronia* is synonymous with *Odontesthes*, but it is not the same as *Austromeniida*.⁸

³ The species have all been reexamined as regards this character; the single exception is *C. promelas*, in which the upper jaw has secondarily become hooked over the lower, somewhat as in the breeding male of *Oncorhynchus*.

⁴ See McCulloch, Proc. Roy. Soc. Queensland, 24, 1912, p. 49.

⁵ Notes Leyden Mus., 32, 1910, p. 229.

⁶ Proc. U. S. Nat. Mus., 31, 1906, p. 94.

⁷ Arch. Mus. Nat. Rio de Janeiro, 17, 1915 (Fauna Brasiliensis, Peixes, *Trematolepides* p. 9).

⁸ *Atherina argentinensis* Cuvier and Valenciennes (Hist. Nat. Poiss., 10, 1835, p. 472) seems to be referable to *Odontesthes*. It is described as having scales in ten longitudinal series, they being smaller than in *Meniida brasiliensis* but larger than in *Austromeniida latilavaria*; and as having the spinous dorsal opposite the anus.